

EAST [delbulminet.vsp.1]

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U1: (etch or etching or etched) with (electrode or capacitor) same mineral near3 acid

(3311) (604/281 OR 606/155 OR 623/1 OR 606/153 OR 606/195 OR 604/104 OR 606/191 OR 606/10  
(4647) ("623/11" OR ("623/8" OR ("623/12" OR ("623/17" OR ("623/925" OR ("623/924")  
(78808) (etch or etching or etched) same (electrode or capacitor)  
(53638) (etch or etching or etched) with (electrode or capacitor)

USPAT: EPO: JPO: Derwent

(etch or etching or etched) with (electrode or capacitor) same mineral near3 acid

Search Terms	Total	USPAT	EPO	JPO	Derwent	IBM
1 ACID. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199, D 1574626						
2 ACIDS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199, 445990						
3 CAPACITOR. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D 406561						
4 CAPACITORS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, 144286						
5 ELECTRODE. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, 885222						
6 ELECTRODES. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, 533458						
7 ETCH. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199, D 103763						
8 ETCHED. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199 144331						
9 ETCHES. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199 9343						
10 ETCHING. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D19 261157						
11 ETCHING8. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D1 1341						
12 MINERAL. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D19 222661						
13 MINERALS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D1 47834						
14 ((MINERAL NEAR3 ACID) SAME ((ETCH OR ETCHED OR ETCHING) WITH (CAPACITOR OR ELECTRODE)) 9						

EAST BRS search

12/16/00

Databases: US Patents, EPO,  
JPO, and Derwent

	Document ID	Source	Page	Date
1	CA 843543 A	DERWEN/A	1	C
2	US 6074960	USPAT 20000613	14	M
3	US 5439565	USPAT 19980606	5	S
4	JP 07090606	JPO 19950404	1	O
5	US 4826434	USPAT 19890502	5	D
6	US 4426260	USPAT 19840117	4	P
7	JP 58077598	JPO 19830510	1	E
8	US 4348255	USPAT 19820907	6	P
9	US 4093887	USPAT 19780606	5	S

unit area.

ABSTRACTED-PUB-NO: EP 616054B

EQUIVALENT-ABSTRACTS: A method of manufacturing electrode foil for aluminium

electrolytic capacitors made by carrying out an etching process divided into at least two stages, comprising the steps of: electrically etching aluminium electrode foil by passing through a mineral acid selected from the group consisting of nitric acid, sulphur acid and a mixed acid thereof having a concentration of 2 to 15%, each added with at least one selected from the group consisting of chromic acid, oxalic acid, citric acid, phosphoric acid, boric acid, succinic acid and malonic acid as an additive having a concentration of 0.1 to 0.8%, at a liquid temperature of 50 to 80 degrees C in an etching process of a final stage for increasing the diameter of pits created in a preceding stage to a diameter suitable for a forming treatment; and in the electrical etching, controlling the concentration of dissolved aluminium to 5 to 25 g/l by any of said nitric acid, said sulphuric acid and said mixed acid thereof, while keeping a dissolution amount of electric etching in said mineral acid at the rate of 20 to 60% of a total dissolution amount by etching.

US 5439565A

Mfg. electrode foil for Al electrolytic capacitors made by etching in at least 2 stages comprise etching Al electrode foil passing through HNO<sub>3</sub> and/or H<sub>2</sub>SO<sub>4</sub> with at least 1 of chronic acid, oxalic acid, citric acid, phosphoric acid, boric acid, succinic acid and malonic acid added as an additive in an etching process of a final stage for increasing the dia. of pits created in a preceding stage to a dia. suitable for voltage formation. The concn. of dissolved Al is controlled to 5025 g/l by HNO<sub>3</sub> and/or H<sub>2</sub>SO<sub>4</sub> in electrical etching. Pref. the concn. of additive added is 0.1-0.8%. The HNO<sub>3</sub> or H<sub>2</sub>SO<sub>4</sub> has a concn. of 2-15% and a liq. temp. of 50-80 deg.C. The amt. of electric etching in the HNO<sub>3</sub> or H<sub>2</sub>SO<sub>4</sub> is 20-60% of a total amt. of dissolution by etching. ADVANTAGE - The foil has high capacitance per unit area.

	Document ID	Source	Frame	Doc
1	CA 843543 A	DERWEN/A	1	C
2	US 6074960	USPAT20000613	14	M
3	US 5439565	DERWE19950808	5	E
4	JP 07090606A	JPO 19950404	7	O
5	US 4826434	USPAT19890502	5	D
6	US 4426260	USPAT19840117	4	P
7	JP 58077598A	JPO 19830510	3	E
8	US 4348255	USPAT19820907	6	P
	US 4093887	USPAT19830603		

DOCUMENT-IDENTIFIER: US 4093887 A

TITLE: Spark plug, particularly for internal combustion engines having composite center electrode

## DEPR:

The copper of matrix material 18 can be dissolved or etched out from the center

electrode 11 by a 5% ammonia solution to which an oxidation substance is added,

for example about 1 to 40% ammonia persulfate, or about 1 to 15% hydrogen peroxide. Copper can also be dissolved by means of mineral acids, such as hydrochloric acid or sulfuric acid in the range of from about 5% to highly concentrated. The acids additionally contain oxidation additives, as above described, or chromate to about 60%. Copper can also be dissolved out by oxidizing acids, such as for example HNO.sub.3, to 10% concentrated;

HNO.sub.3

/HCl mixture 1:5 to 5:1; acidic chromate solutions.

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Drafts Pending Active

11 (etch or etching or etched) with (electrode or capacitor) same mineral near3 acid

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(3311) (604/281 OR 606/155 OR 623/1 OR 606/153 OR 606/195 OR 604/104 OR 606/191 OR 606/104647) ("623/11") or ("623/8") or ("623/12") or ("623/17") or ("623/925") or ("623/924")

(78808) (etch or etching or etched) same (electrode or capacitor)

(53638) (etch or etching or etched) with (electrode or capacitor)

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USPAT LPO JPO Derwent

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Search Terms Total USPAT USOCR EPO JPO Derwent IBM

1	ACID. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199, D 1574626						
2	ACIDS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D199, 445990						
3	CAPACITOR. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D 406561						
4	CAPACITORS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, 144286						
5	ELECTRODE. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D 685222						
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10	ETCHING. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D19 261157						
11	ETCHINGS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D1 1341						
12	MINERAL. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D19 222661						
13	MINERALS. D763, D570, D575, D380, D283, D285, D287, D289, D291, D193, D194, D195, D196, D197, D198, D1 47834						
14	((MINERAL NEAR3 ACID) SAME ((ETCH OR ETCHED OR ETCHING) WITH (CAPACITOR OR ELECTRODE))) 9						

NEW Details

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EAST BRS search

12/16/00

	Document ID	Source	Issue Date	Pa	
1	CA 843543 A	DERWEN/A	1	C	
2	US 6074960	USPAT 20000613	14	M	
3	US 6139565	USPAT 20000613	14	M	
4	JP 07090606A	JPO	19950404	7	O
5	US 4826434	USPAT 19890502	5	D	
6	US 4426260	USPAT 19840117	4	P	
7	JP 58077598A	JPO	19830510	3	E
8	US 4348255	USPAT 19820907	6	P	
9	US 4093887	USPAT 19780606	5	S	

ABSTRACTED-PUB-NO: EP 616054A

BASIC-ABSTRACT: A method of mfg. electrode foil for aluminium electrolytic capacitors, involves an etching process divided into at least two stages. In

a first stage the foil is electrically etched in nitric acid, sulphuric acid or a mixt. of both. In a final stage the foil is electrically etched in a mixt. of the above acid and at least one additive acid selected from chromic acid, oxalic acid, citric acid, phosphoric acid, boric acid, succinic acid and malonic acid. During etching the concn. of dissolved aluminium is in the range 5-25g/l. The final stage increases the dia. of the pits formed in the first stage.

USE - A method of mfg. electrode foil for aluminium electrolytic capacitors.

ADVANTAGE - The method produces an electrode foil having a high capacitance per unit area.

ABSTRACTED-PUB-NO: EP 616054B

EQUIVALENT-ABSTRACTS: A method of manufacturing electrode foil for aluminiumelectrolytic capacitors made by carrying out an etching process divided into at

least two stages, comprising the steps of: electrically etching aluminium electrode foil by passing through a mineral acid selected from the group consisting of nitric acid, sulphur acid and a mixed acid thereof having a concentration of 2 to 15%, each added with at least one selected from the group

consisting of chromic acid, oxalic acid, citric acid, phosphoric acid, boric acid, succinic acid and malonic acid as an additive having a concentration of

0.1 to 0.8%, at a liquid temperature of 50 to 80 degrees C in an etching process of a final stage for increasing the diameter of pits created in a preceding stage to a diameter suitable for a forming treatment; and in the electrical etching, controlling the concentration of dissolved aluminium to 5

to 25 g/l by any of said nitric acid, said sulphuric acid and said mixed acid

thereof, while keeping a dissolution amount of electric etching in said mineral acid at the rate of 20 to 60% of a total dissolution amount by etching.

US 5439565A

Mfg. electrode foil for Al electrolytic capacitors made by etching in at

	Document ID	Source	Issue Date	Pa
1	CA 843543 A	DERWEN/A	1	C
2	US 6074960	USPAT 20000613	14	M
3	US 5439565	DERWE 19950808	5	E
4	JP 07090606 A	JP 19950404	7	
5	US 4826434	USPAT 19890502	5	D
6	US 4426260	USPAT 19840117	4	P
7	JP 58077598 A	JPO 19830510	3	E
8	US 4348255	USPAT 19820907	6	P
9	US 4093887	USPAT 19780606	5	S

CLIPPED IMAGE= JP407090606A

PUB-NO: JP407090606A

DOCUMENT-IDENTIFIER: JP 07090606 A

TITLE: ORGANIC COATED ALUMINUM ALLOY SHEET EXCELLENT IN SPOT RESISTANCE WELDABILITY AND CORROSION RESISTANCE AND SPOT RESISTANCE WELDING METHOD USING

THE SAME

PUBN-DATE: April 4, 1995

INVENTOR-INFORMATION:

NAME

NISHIYAMA, NAOKI

TOTSUKA, NOBUO

IKEDA, TOMOMASA

HASHIGUCHI, KOICHI

NANBAE, MOTOHIRO

INT-CL (IPC): C23C022/00; B32B015/08 ; C23C022/78

ABSTRACT:

PURPOSE: To obtain an aluminum alloy sheet improved in continuous spotting properties at the time of spot resistance welding, excellent in corrosion resistance and easily and economically producible on an industrial scale.

CONSTITUTION: As pretreatment, an alumina layer on the surface is removed away

by alkali etching treatment, or, in an acidic aq. soln. contg. mineral acid,

mainly, a magensia layer is removed away. Otherwise, two treatments are successively executed, and as for the aluminum alloy sheet in which the oxidized film has been subjected to the etching treatment, respectively, as primary layers, a chromate film is formed on the welding joint face at the time

of spot resistance welding by the chromium coating weight of 5 to 200mg/m<sup>2</sup> expressed in terms of metal chromium, and a chromate film is

formed on the face with which an electrode chip is to be contacted by the chromium coating weight of 5 to 100mg/m<sup>2</sup> expressed in terms of metal

chromium and by  $\leq 75\%$  of the chromium coating weight in the welding joint face. Moreover, the surface is coated with organic resin as a secondary layer

by 0.01 to 3.0 $\mu$ m as a dry film thickness.

	Document ID	Source	Patent No.	Pa
1	CA 843543 A	DERWEN/A	1	C
2	US 6074960	USPAT 20000613	14	M
3	US 5439565	DERWE	19950808	5 E
4	JP 07090606A	JPO	19950404	7 O
5	US 4826434	USPAT 19890502	5	D
6	US 4416260	USPAT 19840117	4	
7	JP 58077598A	JPO	19830510	3 E
8	US 4348255	USPAT 19820907	6	P
9	US 4093887	USPAT 19780606	5	S

DOCUMENT-IDENTIFIER: US 4426260 A  
TITLE: Preparation of aluminum electrolytic capacitor foil

CLPV:

c. treating said aluminum foil with 5-40% nitric acid at a temperature of 25.degree. C. to 95.degree. C. for a period of 10 seconds to 30 minutes, said

treatment with nitric acid being carried out at a temperature and for a length of time at least sufficient to cause a reduction in the leakage current of said

capacitor and being the sole mineral acid treatment of said electrolytically etched foil,